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CAMPBELL STEPHENSON LLP	PHAM, KHANH B					
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/851,278	ROTHWEIN ET AL.	
	Examiner	Art Unit	
	Khanh B. Pham	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 01 December 2009.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 56,58,60-64,66,68-72,74,76-80,82 and 84-88 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 56,58,60-64,66,68-72,74,76-80,82 and 84-88 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 56, 58, 60-64, 66, 68-72, 74, 76-80, 82, 84-88** are rejected under 35 U.S.C. 102(b) as being anticipated by Gottlob et al. (“Extending Object-Oriented System with Roles”), hereinafter referred to as “Gottlob”.

As per claim 56, Gottlob teaches a computer-implemented method comprising:

- “selecting a child class from a class hierarchy, wherein the class hierarchy comprises the child class, and a parent class, the parent class and the child class are associated with one another” at page 273, Fig. 1, (“DepartmentManager” class);
- “the child class is configured to inherit an attribute of the parent class” at page 270, 1st full paragraph, page 273, Fig. 1 and Figs. 2-3;
- “the child class comprises one or more associated attributes, the one or more associated attributes comprise the attribute, the one or more associated attributes are configured to describe the item, the selecting the child class is based on the one or more associated attributes” at page 274, Figs. 2-3;
- “the selecting the child class is performed such that each of the one or more associated attributes has a non-null value to describe the item” at page 273,

- “the attribute has a first domain associated with the parent class and a second domain associated with the child class, and the second domain is more restrictive than the first domain” at page 273, Fig. 1;
- “associating the item with the child class, wherein the attribute describes one or more members of the child class, the one or more associated attributes are necessary to describe the item, and the one or more associated attributes are associated with the child class in the class hierarchy” at Figs. 1-3;
- “storing a first record associating the item, and the child class”; at page 273 (“Mrs. Smith is associated with an instance of child class “DepartmentManager”)
- “storing a second record associating the item with the attribute, and value of the attribute” at page 273 and Figs. 1-3 (Mrs. Smith is associated with all attributes and values of DepartmentManger child class) .

As per claim 58 Gottlob teaches the method of claim 56, wherein “the one or more associated attributes further comprises an additional set of attributes not inherited from the parent class” at page 273, Fig. 1 (“Student” child class includes additional attributes such as “university”, “major”, “minor” ... not inherited from parent class “Person” .

As per claim 63, Gottlob teaches the method of claim 56, wherein the one or more associated attributes are metadata of the child class” at Figs. 1-3.

As per claim 64, Gottlob teaches an apparatus comprising:

- “means for selecting a child class from a class hierarchy, wherein the class hierarchy comprises the child class, and a parent class, the parent class and the child class are associated with one another” at page 273, Fig. 1, (“DepartmentManager” class);
- “the child class is configured to inherit an attribute of the parent class” at page 270, 1st full paragraph, page 273, Fig. 1 and Figs. 2-3;
- “the child class comprises one or more associated attributes, the one or more associated attributes comprise the attribute, the one or more associated attributes are configured to describe the item, the means for selecting the child class is based on the one or more associated attributes” at page 274, Figs. 2-3;
- “the means for selecting the child class is configured such that each of the one or more associated attributes has a non-null value to describe the item” at page 273,
- “the attribute has a first domain associated with the parent class and a second domain associated with the child class, and the second domain is more restrictive than the first domain” at page 273, Fig. 1;
- “means for associating the item with the child class, wherein the attribute describes one or more members of the child class, the one or more associated attributes are necessary to describe the item, and the one or more associated attributes are associated with the child class in the class hierarchy” at Figs. 1-3;
- “means for storing a first record associating the item, and the child class”; at page 273 (“Mrs. Smith is associated with an instance of child class “DepartmentManager”)

- “means for storing a second record associating the item with the attribute, and value of the attribute” at page 273 and Figs. 1-3 (Mrs. Smith is associated with all attributes and values of DepartmentManger child class) .

As per claim 66 Gottlob teaches the apparatus of claim 64, wherein “the one or more associated attributes further comprises an additional set of attributes not inherited from the parent class” at page 273, Fig. 1 (“Student” child class includes additional attributes such as “university”, “major”, “minor” ... not inherited from parent class “Person” .

As per claim 71, Gottlob teaches the apparatus of claim 64, wherein the one or more associated attributes are metadata of the child class” at Figs. 1-3.

As per claim 72, Gottlob teaches a system comprising: a processor, a memory coupled to the processor, storing instruction executable on the processor to:

- “selecting a child class from a class hierarchy, wherein the class hierarchy comprises the child class, and a parent class, the parent class and the child class are associated with one another” at page 273, Fig. 1, (“DepartmentManager” class);
- “the child class is configured to inherit an attribute of the parent class” at page 270, 1st full paragraph, page 273, Fig. 1 and Figs. 2-3;
- “the child class comprises one or more associated attributes, the one or more associated attributes comprise the attribute, the one or more associated attributes

are configured to describe the item, the selecting the child class is based on the one or more associated attributes” at page 274, Figs. 2-3;

- “the selecting the child class is performed such that each of the one or more associated attributes has a non-null value to describe the item” at page 273,
- “the attribute has a first domain associated with the parent class and a second domain associated with the child class, and the second domain is more restrictive than the first domain” at page 273, Fig. 1;
- “associating the item with the child class, wherein the attribute describes one or more members of the child class, the one or more associated attributes are necessary to describe the item, and the one or more associated attributes are associated with the child class in the class hierarchy” at Figs. 1-3;
- “storing a first record associating the item, and the child class”; at page 273 (“Mrs. Smith is associated with an instance of child class “DepartmentManager”)
- “storing a second record associating the item with the attribute, and value of the attribute” at page 273 and Figs. 1-3 (Mrs. Smith is associated with all attributes and values of DepartmentManger child class) .

As per claim 74 Gottlob teaches the system of claim 72, wherein “the one or more associated attributes further comprises an additional set of attributes not inherited from the parent class” at page 273, Fig. 1 (“Student” child class includes additional attributes such as “university”, “major”, “minor” ... not inherited from parent class “Person” .

As per claim 79, Gottlob teaches the apparatus of claim 72, wherein “the one or more associated attributes are metadata of the child class” at Figs. 1-3.

As per claim 80, Gottlob teaches a computer readable medium comprising:

- “a first set of instructions, executable on the processor , configured to select a child class from a class hierarchy, wherein the class hierarchy comprises the child class, and a parent class, the parent class and the child class are associated with one another” at page 273, Fig. 1, (“DepartmentManager” class);
- “the child class is configured to inherit an attribute of the parent class” at page 270, 1st full paragraph, page 273, Fig. 1 and Figs. 2-3;
- “the child class comprises one or more associated attributes, the one or more associated attributes comprise the attribute, the one or more associated attributes are configured to describe the item, the selecting the child class is based on the one or more associated attributes” at page 274, Figs. 2-3;
- “the selecting the child class is performed such that each of the one or more associated attributes has a non-null value to describe the item” at page 273,
- “the attribute has a first domain associated with the parent class and a second domain associated with the child class, and the second domain is more restrictive than the first domain” at page 273, Fig. 1;
- “a second set of instructions, executable on the processor , configured to associate the item with the child class, wherein the attribute describes one or more members

of the child class, the one or more associated attributes are necessary to describe the item, and the one or more associated attributes are associated with the child class in the class hierarchy" at Figs. 1-3;

- "a third set of instructions, executable on the processor , configured to store first record associating the item, and the child class"; at page 273 ("Mrs. Smith is associated with an instance of child class "DepartmentManager")
- "a fourth set of instructions, executable on the processor , configured to storing a second record associating the item with the attribute, and value of the attribute" at page 273 and Figs. 1-3 (Mrs. Smith is associated with all attributes and values of DepartmentManger child class) .

As per claim 82 Gottlob teaches the storage medium of claim 80, wherein "the one or more associated attributes further comprises an additional set of attributes not inherited from the parent class" at page 273, Fig. 1 ("Student" child class includes additional attributes such as "university", "major", "minor" ... not inherited from parent class "Person" .

As per claim 87, Gottlob teaches the storage medium of claim 80, wherein "the one or more associated attributes are metadata of the child class" at Figs. 1-3.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 60-62, 68-70, 76-78, 84-86** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gottlob as applied to claims above, and in view of Brookler (US 6,754,666 B1), hereinafter “Brookler”.

As per claims 60, 68, 76, 84, Gottlob teaches the method of claim 56 discussed above, but does not explicitly teach: "said storing the first record is to a first memory structure and said storing the second record is to a second memory structure". However, Brookler teaches a similar method for storing different records associated with a hierarchy in different memory structure at Col. 3 lines 55-60 and Figs. 4-10. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Brookler with Gottlob's teaching in order to "provide for efficient storage of the data", as suggested by Brookler.

As per claims 61, 69, 77, 85, Gottlob and Brookler teach the method of claim 60 discussed above. Brookler also teaches: "the first and second memory structures are distinct from one another" at Col. 3 lines 55-60 and Figs. 4-10.

As per claims 62, 70, 78, 86, Gottlob teaches the method of claim 60, wherein "the first and second memory structures are table in a database" at Col. 3 lines 55-60 and Figs. 4-10.

5. **Claim 88** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gottlob as applied to claim 56 above, and in view of Tso (US 6,385,602 B1), hereinafter "Tso".

As per claim 88, Gottlob teaches the method of claim 56 as discussed above, but does not explicitly teach wherein "the class hierarchy describes vehicles". However, it is obvious that the hierarchy as taught by Gottlob can be used to describes anything, including vehicles as claimed. Tso teaches at Figs. 3A-C the use of hierarchy to describes vehicles. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use Gottlob's hierarchy to describes vehicles as suggested by Tso so that "a category hierarchy is provided and allows for attribute inheritance of a parent's attributes by a child category" (Tso, Col. 1 lines 15-20)

Response to Arguments

6. Applicant's arguments filed 12/1/09 have been fully considered but they are not persuasive. The examiner respectfully traverses applicant's arguments.

Regarding the 102(b) rejection based upon Gottlob reference, applicant argued that "the features of the references the Office Action purports to map to the specific limitations of Applicant's claims cannot be ascertained. Indeed, the particular features of the cited references that are relied upon have not been designated as nearly as

practicable, and the pertinence of each reference has not been clearly explained". The examiner respectfully submits that the Gottlob reference has been used by the examiner to reject similar claimed limitations, and the detailed mapping and examiner's interpretation of the teaching of the reference has been discussed before (See Non-Final rejection dated 9/15/2006 and Final-rejection dated 2/1/2007.) All examiner's mapping and explanation previously cited in these Office Actions are incorporated into this respond to arguments.

Applicant's argued that Gottlob does not teach "the selecting the child class is performed such that each of the one or more associated attributes has a non-null value to describe the item". On the contrary, Gottlob teaches at page 273, 2nd paragraph that "An instance **stores a value for each instance variable** defined in or inherited by its class", which clearly shows that none of the attribute associated with the child class has a NULL value, because each instance variable has "a value" stored in it.

Applicant further argued that Gottlob fails to disclose "associating the item with the child class, wherein the attribute describes one or more members of the child class, the one or more associated attributes are necessary to describe the item". On the contrary, Gottlob teaches at least at Fig 1 the child class "Student" with associated attributes "University", "Major", "minor". These attributes are necessary to describe a student. In another example, the attribute "Department" is necessary to describe a Department Manager, who is associated with "DepartmentManager" child class .

Applicant further argued that Gottlob does not teach that “the attribute has a first domain associated with the parent class and a second domain associated with the child class, and the second domain is more restrictive than the first domain”. However, the same issue has been discussed before in the Final rejection dated 2/1/2007.

Applicant is referred to pages 4-5 for detailed explanation of the examiner position.

Applicant further argued that Gottlob does not teach “storing a first record associating the item, and the child class; and storing a second record associating the item with the attribute, and a value of the attributes”. On the contrary, Gottlob teaches at page 273 that after being promoted to Department Manager, Mrs. Smith is associated with an instance of child class “DepartmentManager” by creating an instance class Department. Thereafter, “The instance variables of the instance of Employee that represents Mrs. Smith must be copied into the corresponding instance variables of the new instance of DepartmentManager”, which corresponds to the second record associating the item with the attribute and value as recited in the claim. Creating and copying as taught by Gottlob are same as storing as recited in the claim.

In light of the foregoing arguments, the 35 U.S.C 102 and 103 rejections are hereby sustained.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Pham whose telephone number is (571) 272-4116. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Khanh B. Pham/
Primary Examiner
Art Unit 2166

March 1, 2010